

REMARKS

In the February 27, 2003 Office Action, the Examiner noted that claims 1-3 were pending in the application; objected to the use of a Japanese character in Fig. 1; and rejected claims 1-3 under 35 U.S.C. § 102(b) as anticipated by U.S. Patent 5,712,694 to Taira et al. (Reference B). Claims 4-6 have been added and thus, claims 1-6 remain in the case. The Examiner's rejections are traversed below.

The Invention

The present invention is directed to a liquid crystal display as illustrated in Figs. 1 and 2 of the application in which light generated by a cylindrical fluorescent lamp 6 is reflected by lamp reflector 7 and reflection sheet 10 to pass through a light control sheet, such as prism sheet 12 which controls and modifies the direction of emission and direction of polarization of the light from emission face 11 of light guide plate 4 through polarization plate 14 to the light input side 13a of a liquid crystal cell 13 (see page 6, lines 2-10). The prism sheet is made by extruding polyethylene terephthalate (ET) from an extrusion machine and performing a two-axle drawing process to produce a sheet with a predetermined width, then forming prismatic face 22 (see page 6, last 7 lines) and cutting to match the size of the emission face of the light guide plate. The drawing process produces varying polarization directions of emitted light, depending on which portion of the sheet is used (see page 8, line 20 to page 9, line 28 and Fig. 9). Therefore, the portion of the sheet used is selected to produce a screen with (near) maximum brightness.

The Prior Art: U.S. Patent 5,712,694 to Taira et al.

The Taira et al. patent is directed to a liquid crystal display having components similar to those of the present invention, except that a half-wave film 2610 (Fig. 31) is inserted between prism sheet 2613 and polarizing plate 2602 of liquid-crystal panel 2604. As explained with reference to Fig. 2, "the vibration direction of the polarized light 106 emitted from the prism sheet 109 usually is not coincident with the transmitted axis of the polarizing plate ... on the incident side of the liquid-crystal panel" (column 7, lines 14-18). As described at column 21, lines 27-32 with reference to Figs. 31 and 32, the half-wave film was added to align the polarization of the light reaching polarizing plate to provide maximum illumination.

Drawings

In paragraph 2 on page 2 of the Office Action, the Examiner objected to the drawings due to the use of a Japanese character in Fig. 1. Replacement Sheets for all of the drawings

are attached with the Japanese legends replaced with their translation in English. Therefore, withdrawal of the objection is respectfully requested.

Rejections under 35 U.S.C. § 102

In paragraph 4 on pages 2-3 of the Office Action, claims 1-3 were rejected under 35 U.S.C. § 102(b) as anticipated by Taira et al. As noted above, the construction of the liquid crystal display taught by Taira et al. is very similar to the present invention and Taira et al. recognized the drawback of conventional prism sheets, i.e., that the light emitted is not always polarized in the same direction as the polarizing sheet of the liquid crystal panel. However, the solution taught by Taira et al. was to add an additional element, i.e., a half-wave film 2610 which as illustrated in Fig. 31 is located between the polarizing plate 2602 and prism sheet 2613. Given that all surfaces of the half-wave film are illustrated as flat in Fig. 31, it appears that the half-wave film is applied to the polarizing plate and is not part of the prism sheet.

The independent claims have been amended to clarify that according to the present invention the characteristics of the light control sheet is constructed using "a resin material drawing process" (e.g., claim 1, line 9) and the portion used in the display is selected and oriented so that "a maximum-intensity-direction of polarization involved by light emitted from said light guide plate [is rotated] toward a direction of light transmission axis of said polarization plate by a polarization rotating ability that said light control sheet acquired during the resin material drawing process" (e.g., claim 1, last 4 lines). The half-wave film taught by Taira et al. does not have the construction and properties of the light control sheet recited in the independent claims.

Furthermore, as described above, in the preferred embodiment the light control sheet is provided by a prism sheet and this construction has been reflected in new dependent claims 4-6. It is submitted there is no suggestion in Taira et al. of using a light control sheet constructed as recited in claims 1-3, particularly when the light control sheet is the prism sheet as recited in claims 4-6. Therefore, it is submitted that claims 1-6 patentably distinguish over Taira et al. for the reasons discussed above.

Other Comments

In item 5 on page 3 of the Office Action, it was implied that U.S. Patent Application Publication 2001/0003472 was a prior art reference. However, as noted in the second sentence of item 5, this is a publication of the subject application and thus, it is not prior art.

Summary

It is submitted that Taira et al. does not teach or suggest the features of the present claimed invention. Thus, it is submitted that claims 1-6 are in a condition suitable for allowance. Reconsideration of the claims and an early Notice of Allowance are earnestly solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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Date: 8/27/03

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on 27 August, 2003
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